

DRINKING WATER  
EMERGENCY OPERATIONS PLAN CHECKLIST



A. Does the water system have an emergency operations plan?

A map of the system showing all elements of the system as well as critical operation points of the system is an essential part of such a plan. The elements of the system include all wells or other sources, storage tanks, booster pumps, hydropneumatic tanks, vacuum relief valves, blowoff valves, chlorination injection points, etc.

B. Does the emergency operations plan detail steps the water system will take to assure continuation of service in the following emergency situations (paragraph numbers below refer to R18-4-116.A.):

1. Loss of source of the water supply?

(a) If the system has only one source of water (well, spring, or surface intake), does the plan explain how water will be transported to the system when the source is off-line for more than 24 hours? (Possible methods: connections to another system, hauled water in an approved tanker truck to storage tank with proper connections).

(b) If the system has more than one source, does the plan show, by engineering analysis, that the system has sufficient remaining source capacity to supply the average daily demand during the peak month of the year when the highest capacity source is off-line?

(c) If the system serves residences, does the plan indicate either 24 hour (peak month) storage, or if multi well, does the plan indicate storage is adequate if the largest well is subtracted (R18-4-503.B.)?

2. Loss of supply due to major component failure or structural collapse?

(a) Does the plan identify critical components that may be at risk (deteriorated due to aged condition, corrosion, and/or wear and tear), such as storage tanks, booster pumps, hydropneumatic tanks, transmission pipelines, water treatment plants, or chlorination facilities?

(b) Does the plan (i) indicate redundancy if the major components which will mitigate the impacts of failure of a single unit failure; or explain how a failed component can be safely bypassed; or explain another method of providing potable water, such as connection to or hauling water from another ADEQ approved system, which can be implemented in 24 hours?

(c) Does the system have a plan of all pipes (including size) that also shows valve locations, blowoffs, and fire hydrants?

3. Damage to power supply equipment and loss of power?
  - (a) Does the plan indicate an alternative electric feeder line from the electric utility, or availability and location of a standby generator for all critical electrical equipment?
  - (b) Does the plan indicate a standard procedure to routinely test standby generators?
  - (c) Does the plan indicate that equipment electrical control panels and wiring to booster, transfer or well pumps can be repaired or replaced within 24 hours?
  - (d) Is 24 hour emergency storage available without power - at gravity flow?
4. Contamination of distribution system water due to backflow?
  - (a) Does the system have an acceptable backflow protection program in accordance with R18-4-115 or an approved compliance schedule?
  - (b) Does the plan explain how the system will use emergency disinfection or implement specified emergency operating procedures, including public notification contacts plus organizational contacts with phone numbers, if backflow contamination is discovered due to microbiological or chemical causes?
  - (c) Does the plan indicate that water service will be shut off to a connection in 24 hours if a faulty backflow prevention device is found?
  - (d) Is there a controlled flushing plan that will enable flushing of lines without expanding the area of contamination?
5. Collapse of reservoirs or reservoir roofs or pumphouse structures?  
(see item B.2).
6. Breaks in transmission or distribution lines ?
  - (a) Does the plan indicate that water line breaks of 6" pipe or smaller will be repaired within 24 hours?
  - (b) Is there a standard operating procedure for flushing pipelines and disinfection and sampling after a line break?
  - (c) Does the plan indicate a valve preventative maintenance program in which (i) all the system's valves are inspected and operated at least once a year; and (ii) a log is kept in which each valve is identified and the date of each inspection and the name of the individual inspector listed?

(d) Does the plan indicate key system owned equipment necessary to make emergency repairs, such as backhoes, compactors or bulldozers; or how the equipment will be made available?

7. Chemical or microbiological contamination of water supply?

(a) Does the plan explain how the system will use emergency disinfection in the event of microbiological contamination?

(b) Does the plan indicate what target chlorine residual will be maintained in the system after a microbiological contamination event?

(c) Does the plan explain the system's emergency procedures in case of chemical contamination?

C. Does the plan properly address the following (paragraph numbers below refer to R18-4-116.B.):

1. Are the provisions for alternative water sources mentioned in the plan reasonable?

(a) Does the system have an emergency contingency budget item or equivalent?

(b) Does the system control its alternate water source or have a contract or memorandum of agreement with alternate suppliers, as needed?

(c) Is the alternative water source approved by the Department of Environmental Quality for the specific type of use, i.e., community, non-transient non-community, etc.?

2. Are the notification procedures to regulatory agencies, news media and users adequate ? (reference R18-4-104.L., R18-4-105, & R18-4-210)

(a) Does the plan list the appropriate Regional Office phone number?

NORTHERN REGIONAL OFFICE (Flagstaff) - (520) 779-0313

CENTRAL OFFICE (Phoenix) - (602) 207-4619

SOUTHERN REGIONAL OFFICE (Tucson) - (520) 628-6733

(b) Does the plan list the ADEQ Drinking Water toll free "hotline" phone number?  
1-800-234-5677

3. Are the disinfection and testing procedures for the distribution system adequate once service is restored?

(a) Does the system have an adequate routine microbiological sampling plan according to R18-4-202.C.?

4. Are the critical system components that must remain in service, or be returned to service quickly, properly identified? Is this represented by a flow chart?
5. Does the plan adequately identify the spare parts necessary to keep the critical components in operation?
  - (a) Does the plan identify a minimum inventory of spare parts (e.g. valves, pipes, clamps) with size and number indicated?
  - (b) Does your warehouse inspection indicate the minimum inventory is on hand, or does plan give names and phone numbers of local suppliers stocking necessary supplies?
6. Does the plan adequately indicate what emergency response training is necessary for the operational staff?
  - (a) Is there a record of employee training, number of contact hours, courses taken, instructing organization and instructor's name?
  - (b) Does the plan designate which responsible key employees, (including phone numbers) will be available under emergency conditions?
  - (c) Is the training of the key employees adequate?

### EOP QUESTIONNAIRE (Guideline)

- A. Is a system map available (existing)?
- B. Is an engineering evaluation of the system available or is it necessary to do one?
- C. Are alternative sources readily available?
- D. Are critical components/points identified?
- E. Are backup parts/components on hand?
- F. Has a backflow prevention evaluation been done?
- G. Does Stand-by power exist?
- H. Does a preventative maintenance program exist?

#### R18-4-104.L Reporting requirements

Emergencies: A water supplier shall notify the Department, by telephone, as soon as possible but no later than 24 hours after the occurrence of any of the following emergencies:

1. Loss of source of the water supply;
2. Loss of supply due to major component failure;
3. Damage to power supply equipment or loss of power;
4. Contamination of water in the distribution system as a result of backflow;
5. Collapse of reservoirs or reservoir roofs or pumphouse structures;
6. Breaks in transmission or distribution lines; and
7. Chemical or microbiological contamination of the water supply.

#### R18-4-116. Emergency operations plans

A. By January 1, 1994, each community water system shall develop and keep in an easily accessible location an emergency operations plan. The emergency operations plan shall detail the steps that the water system will take to assure continuation of service, as a minimum, in the following emergency situations:

1. Loss of source of the water supply;
2. Loss of supply due to major component failure;
3. Damage to power supply equipment or loss of power;
4. Contamination of water in the distribution system as a result of backflow;
5. Collapse of reservoirs or reservoir roofs or pumphouse structures;
6. Breaks in transmission or distribution lines; and
7. Chemical or microbiological contamination of the water supply.

B. The emergency operations plan required by Subsection A. of this Section shall address all of the following issues:

1. the provision of alternate sources of water during the emergency;
2. notification procedures relating to regulatory agencies, news media, and users which shall include personal protection and water-use guidelines;
3. disinfection and testing of the distribution system once service is restored;
4. identification of critical system components that shall remain in service or be returned to service quickly;
5. critical spare parts inventory; and
6. staff training in emergency response procedures.